ABSTRACT OF THE DISCLOSURE

Texturing a semiconductor material using negative potential dissolution (NPD), by applying highly negative (cathodic) potentials during conditions of wet etching, and a textured semiconductor material formed therefrom. Semiconductor material is subjected to wet etching conditions, negative biasing at more negative than -60 V, and, specifically controlled and directed illumination by optically processed non-ambient light, resulting in significant increase in values of cathodic current density, and, rate and extent of texturing, of the semiconductor material as a function of time. As cut unpolished semiconductor material is subjected to wet etching conditions and negative biasing, during non-specifically controlled and directed illumination by unprocessed ambient light. Illumination of the as cut unpolished semiconductor material is not needed for increasing values of cathodic current density, and, rate and extent of the texturing, and therefore, upon type of textured as cut unpolished semiconductor material formed therefrom. Particularly applicable to manufacturing solar cells from semiconductor materials.